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10/806,209	03/23/2004	Shuichi Tsukada	OGW-0311	1922
24978	7590	05/11/2007		
GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606			EXAMINER FISCHER, JUSTIN R	
			ART UNIT 1733	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/806,209  
Filing Date: March 23, 2004  
Appellant(s): TSUKADA ET AL.

**MAILED**  
**MAY 11 2007**  
**GROUP 1700**

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Patrick Burns  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed February 28, 2007 appealing from the Office action mailed August 28, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows: a rejection of claim 7 was erroneously omitted from the Final Rejection mailed on August 28, 2007. A new grounds of rejection addressing the limitations of claim 7 is set forth below. It is further noted that the limitation of claim 7 was previously considered as it is present in independent claim 1.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct.

**NEW GROUND(S) OF REJECTION**

**Claim 7** is rejected under 25 U.S.C 103(a) as being unpatentable over either one of Kajiwara (JP '510) or Numata (JP '824) and further in view of Akiyoshi (JP '902),

Martin (US '792), McDonald (US '342), Sakamoto (US '993), Hendrie (US 368), and Yamada (JP '330). It is initially noted that claim 7 is rejected over the same combination of references as claims 4 and 6. Additionally, it is noted that this limitation has been previously considered since it is present in independent claim 1.

Kajiwara and Numata generally disclose pneumatic tire constructions having a rubber layer or "volume adjusting layer" disposed between an innerliner and a carcass structure. While the references generally depict the rubber layers as continuous in the circumferential direction of the tire (rotational direction of tire), it is extremely well known to form a wide variety of tire components in a continuous or discontinuous (intermittent) manner, as shown for example by Akiyoshi (Figure 1 and 6), Martin (Figures 1 and 6), McDonald (Column 2, Lines 1-10), Sakamoto (Column 1, Lines 50-60), and Hendrie (Column 3, Lines 30-40). One of ordinary skill in the art at the time of the invention would have recognized a discontinuous arrangement to include arrangements in which the rubber layers are arranged at equal intervals- this is particularly evident in view of Akiyoshi, which describes the alternate use of a continuous arrangement (Figure 6) and a discontinuous arrangement formed of layers disposed at "regular intervals" (Figure 1: see translation- Paragraph 8). Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to provide the rubber layers of either one of Kajiwara or Numata in a discontinuous arrangement as defined by the claimed invention (equal intervals), it being recognized that discontinuous arrangements contribute to minimizing tire weight while providing a desired property/characteristic.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

JP 03193510	KAJIWARA	8-1991
JP 11170824	NUMATA	6-1999
JP 2001-113902	AKIYOSHI	4-2001
4,034,792	MARTIN	7-1977
4,343,342	McDONALD	8-1982
6,418,993	SAKAMOTO	7-2002
6,536,368	HENDRIE	3-2003
JP 02106330	YAMADA	4-1990

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 1 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Kajiwara or Numata in view of Akiyoshi, Martin, McDonald, Sakamoto, and Hendrie.

Kajiwara (Figures 1 and 2- reference character 9) and Numata (Figures 1, 2, and 5- reference character 21) disclose pneumatic tire constructions in which a rubber member or "volume adjusting member" is arranged between an inner liner and a carcass layer in the bead regions. It is clearly evident from each figure that the

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inclusion of rubber member reduces the volume of the tire cavity by altering the contour of tire inner surface (change in section shape). The reference, however, is silent as to the formation of such members in a circumferentially discontinuous manner (intermittently arranged). In any event, it is extremely well known in the tire industry to form a wide variety of tire layers and components in either a continuous or discontinuous manner, as shown for example by Akiyoshi (Figures 1-10), Martin (Figures 1 and 6), McDonald (Column 2, Lines 1-10), Sakamoto (Column 1, Lines 30-40), and Hendrie (Column 3, Lines 30-40). In such instances, sufficient reinforcement or effect on a given property is obtained and tire weight is minimized. It is emphasized that the concept of forming tire layers in a discontinuous manner is extremely well known and conventional in the tire industry and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to incorporate such a design in either Kajiwara or Numata depending on the desired distribution of the reinforcement. Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the formation of such members in a discontinuous or intermittent fashion.

In particular, Akiyoshi is directed to an extremely similar tire construction in which a "volume adjusting member" is continuously (Figure 6) or discontinuously (Figure 1) arranged over the circumferential extent of the tire- in this instance, a discontinuous arrangement is able to provide the desired reduction in noise (reduction in columnar resonance), which is the same benefit desired in the tire of Kajiwara. As such, there

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would have been a reasonable expectation of success in forming the construction of Kajiwara with an intermittent or discontinuous arrangement.

Regarding claim 2, discontinuous arrangements are commonly formed with equal spacings (see above noted references). One example of such an arrangement is Akiyoshi (Figures and Paragraph 8).

As to claim 3, Kajiwara teaches a thickness between 3 and 10 millimeters (Page 59, bottom right) and Numata teaches a thickness between 1.5 and 2.5 millimeters (Abstract).

**Claims 4, 6, and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara (JP 03193510), Numata (JP 11170824), Akiyoshi, Martin (US 4,034,792), McDonald (US 4,343,342), Sakamoto (US 6,418,993), and Hendrie (US 6,536,368) as applied in the claims above and further in view of Yamada (JP 02106330). The references are applied in the same manner as set forth in Paragraph 4 of the Non-Final Rejection mailed on March 30, 2006.

Kajiwara and Numata are silent as to the specific tire manufacturing method. In any event, the claimed method is consistent with the common methods of forming tires, as shown for example by Yamada (Abstract and Figures 2 and 3). In this instance, Yamada recognizes the placement of a reinforcing layer (analogous to rubber members) on each side of a base rubber sheet (analogous to inner liner), subsequently winding the assembly on a drum, and winding any additional layers and finally

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curing/vulcanizing the tire. It is emphasized that such a winding technique around a drum is extremely well known and extensively used in the manufacture of tires.

Regarding claim 7, discontinuous arrangements are commonly formed with equal spacings (see above noted references). One example of such an arrangement is Akiyoshi (Figures and Paragraph 8).

#### **(10) Response to Argument**

Applicant argues that the office action fails to provide objective evidence sufficient to show that the skilled artisan would have been motivated to rely upon the teachings of Martin, McDonald, Sakamoto, or Hendrie to modify either the reinforcement layer 9 of Kajiwara or the reinforcement layer 29 of Numata. It is agreed that the above noted secondary teachings are not directly analogous to a reinforcement layer disposed between the innerliner and the carcass. However, the preponderance of evidence clearly suggests the general concept of forming tire components continuously or discontinuously. In particular, discontinuous arrangements contribute to minimizing tire weight while providing a desired property or characteristic.

Akiyoshi has been additionally cited to evidence the alternate use of continuous and discontinuous arrangements in the tire industry (Figures 1 and 6). In this instance, the arrangement of Akiyoshi is designed to reduce road noise, which is analogous to the benefit desired in the tire construction of Kajiwara. While the respective arrangements are not identical, Akiyoshi generally recognizes the ability to use reinforcement arrangements designed to reduce road noise in a continuous or discontinuous manner.



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Thus, there would have been a reasonable expectation of success in forming the tire of Kajiwara or Numata with a discontinuous or intermittently arranged "volume adjusting member".

Applicant further argues that Paragraphs 24-35 provide a showing of unexpected results. The examiner respectfully disagrees. Table 1 of the original disclosure compares the inventive tire construction to (a) a tire construction without volume adjusting members (Conventional Example 1), (b) a tire construction having a volume adjusting member in the tire cavity beneath the crown/tread region (Conventional Example 2), and (c) a tire construction having a volume adjusting member in the tire cavity at a bead portion (Conventional Example 3). However, applicant has not compared the inventive tire construction to the closest prior art- each of the conventional examples include volume adjusting members within the tire cavity while the inventive tire include a volume adjusting member between the inner liner and the carcass (within tire). As set forth in the rejections above, the closest prior art is either one of Kajiwara or Numata- each reference describes a tire construction in which a volume adjusting member is positioned within the tire (between the inner liner and the carcass). A more persuasive comparison would be between a tire having a continuous volume adjusting member within the tire structure (Kajiwara or Numata) and a tire having a discontinuous volume adjusting member within the tire structure (inventive tire-labeled "embodiment" in Table 1). While applicant argues that Kajiwara is for reducing noise and not for reducing noise due to resonance phenomena, Kajiwara and Numata represent the closest prior art as pertains to the structural makeup of the tire.

In regards to claims 4 and 6, Yamada has been provided to evidence a known technique of applying reinforcing members to an underlying structure, whether it be an innerliner or a carcass. In particular, Yamada is directed to a method of applying a rubber layer to main carcass portion and suggests the following alternative techniques:

(a) rubber sheet is disposed against the main carcass portion (position opposite carcass turnup portion) or

(b) rubber is integrally applied to the carcass prior to winding on the drum

In the method of Kajiwara or Numata, a rubber layer (volume adjusting layer) is positioned adjacent and outward of an innerliner layer. In light of Yamada, one of ordinary skill in the art at the time of the invention would have found it obvious to attach the rubber layer of Kajiwara or Numata (a) after the inner liner is wound on the forming drum or (b) as a preform or assembly with the innerliner. It is emphasized that Yamada generally recognizes the ability to separately apply adjacent tire components or apply them as preforms or assemblies and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed method. It is further noted that the disclosure of Yamada to "integrally apply" the rubber member to the carcass prior to winding is seen to constitute the claimed crimping as the original disclosure fails to define the crimping step in a manner that defines over the technique of Yamada. Lastly, it is evident that in modifying the discontinuous arrangements of Kajiwara or Numata (as formed in view of above noted references), the respective methods would involve "intermittently crimping" the rubber layers

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.


(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be

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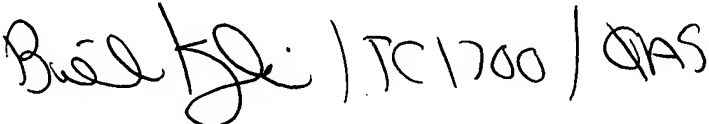
treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

Justin Fischer 

**A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:**

Bill Krynski  Bill Krynski / TC 1700 / QAS

Conferees:

Richard Crispino 

Greg Mills 